5

ly mounted for swinging movement of the planet gear axes relative to the planet carrier, a ring gear meshing with the planet gears, and means mounting the ring gear with freedom for radial and swinging movement with respect to the said fixed axis comprising a ring gear support, an annular coupling member connecting the ring gear to the support, interengaging splines on the support and on one end of the member, interengaging splines on the ring gear and on the other end of the support, the two sets of interengaging splines constituting splined con- 10 nections swingable and shiftable axially of the gear, the support and the member defining a pair of registering circumferential grooves adjacent one connection and the member and the ring gear defining a pair of registering circumferential grooves adjacent the other connection, and 15 arcuate springs extending circumferentially of the member mounted in both pairs of grooves, the springs being sinuous axially of the ring gear and engaging both walls of the grooves.

5. A gear mechanism comprising, in combination, a 20 gear, a support therefor, a member connecting the gear to the support, a swingable connection between the gear and the member, a swingable connection between the member and the support, and resilient means in each said connection operable to locate the connection and yield-able to accommodate shifting of the connection.

6. A gear mechanism comprising, in combination, a gear, a support therefor, a member connecting the gear to the support, a splined connection shiftable axially of the gear between the gear and the member, a splined connection shiftable axially of the gear between the member and the support, and resilient means in each said connection operable to locate the connection axially and yieldable to accommodate axial shifting of the connection.

7. A gear mechanism comprising, in combination, a 35 gear, a support therefor, a member connecting the gear to the support, a splined connection swingable and shiftable axially of the gear between the gear and the member, a splined connection swingable and shiftable axially of the gear between the member and the support, and 40 resilient means in each said connection operable to locate the connection axially and directionally and yieldable to accommodate movement of the connection.

8. A gear mechanism comprising, in combination, a ring gear, a support therefor, an annular coupling member connecting the gear to the support, interengaging splines on the support and on one end of the member, interengaging splines on the gear and on the other end of the support, the two sets of interengaging splines constituting splined connections swingable and shiftable axially of the gear, and resilient locating means at each connection.

9. A gear mechanism comprising, in combination, a ring gear, a support therefor, an annular coupling member connecting the gear to the support, interengaging splines on the support and on one end of the member, interengaging splines on the gear and on the other end of the support, the two sets of interengaging splines con-

6

stituting splined connections swingable and shiftable axially of the gear, the support and the member each defining a pair of opposed abutments adjacent one connection and the member and the gear each defining a pair of opposed abutments adjacent the other connection, and arcuate springs extending circumferentially of the member at both connections, the springs being sinuous axially of the gear and engaging the abutments.

10. A gear mechanism comprising, in combination, a ring gear, a support therefor, an annular coupling member connecting the gear to the support, interengaging splines on the support and on one end of the member, interengaging splines on the gear and on the other end of the support, the two sets of interengaging splines constituting splined connections swingable and shiftable axially of the gear, the support and the member defining a pair of registering circumferential grooves adjacent one connection and the member and the gear defining a pair of registering circumferential grooves adjacent the other connection, and a number of arcuate springs extending crcumferentially of the member mounted in each pair of grooves, the springs being sinuous axially of the gear and engaging both walls of the grooves.

11. A planetary gear train comprising, in combination, a sun gear mounted with limited freedom for radial movement, a planet carrier mounted on a fixed axis coaxial with the sun gear, a number of planet gears rotatably mounted on the planet carrier and meshing with the sun gear, a ring gear meshing with the planet gears, and means mounting the ring gear with freedom for radial and swinging movement with respect to the said fixed axis, the mounting means including impositive biasing means urging the ring gear to a normal position.

12. A planetary gear train comprising, in combination, a sun gear mounted with limited freedom for radial movement, a planet carrier mounted for rotation about a fixed axis coaxial with the sun gear, a number of planet gears rotatably mounted on the planet carrier and meshing with the sun gear, a ring gear meshing with the planet gears, and means non-rotatably mounting the ring gear with freedom for radial and swinging movement with respect to the said fixed axis, the mounting means including impositive biasing means urging the ring gear to a normal position.

References Cited in the file of this patent UNITED STATES PATENTS

2,456,572	Wagstaff Dec. 14, 19	948
2,577,009	Frantz Dec. 4, 19	951
2,591,734	Smith et al Apr. 8, 19	952
2,700,311	Bade Jan. 25, 19	955
2,703,021	Stoeckicht Mar. 1, 19	955
2,844,052	Stoeckicht July 22, 19	958
	FOREIGN PATENTS	
503,307	Germany Jan. 18, 19	920
609,654	Germany Feb. 19, 19	335
890,697	France Nov. 8, 19	943